

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer readable medium storing computer executable instructions which, when executed by a computer, perform a process configured to allow a user to set attributes of individual cells in a plurality of multi-dimensional arrays representing a common virtual geographical area, each of the cells representing a predetermined location within the virtual geographical area, the process comprising:

a) quantizing a set of possible conditions for a first aspect of weather into a first set of possible values;

b) quantizing a set of possible conditions for a second aspect of weather into a second set of possible values;

c) quantizing a third set of possible conditions for a third aspect of weather into a third set of possible values;

d) receiving a user input selecting a cell in a graphical depiction of any one of the plurality of multi-dimensional arrays, the selected cell representing a particular location within the virtual geographical area;

e) defining weather conditions of the particular location represented by the selected cell by receiving user inputs selecting one of the possible conditions for each of the first, second, and third aspects of weather;

f) a) determining a one of the first set of possible values which corresponds to the selected condition for the of a first aspect of weather, the determined one of the first set of possible values being attribute to be applied to the selected cell as a multi-dimensional array, the first attribute being associated with a first color channel;

g) b) determining a one of the second set of possible values which corresponds to the selected condition for the of a second aspect of weather, the determined one of the second set of possible values being attribute to be applied to the selected cell as multi-dimensional array, the second attribute being associated with a second color channel;

h) e) determining a one of the third set of possible values which corresponds to the selected condition for the of a third aspect of weather, the determined one of the third set of

~~possible values being attribute to be applied to the selected cell as a multi-dimensional array, the~~
third attribute ~~being~~-associated with a third color channel; and

~~d) — receiving user input selecting a cell in a graphical depiction of any one the~~
~~plurality of multi-dimensional arrays;~~

~~e) — applying the values of the first, second, and third attributes to the selected cell;~~
and

~~i) f)~~ shading the selected cell a color based on the values of the first, second, and third attributes,

~~wherein the first, second and third attributes are used to define an aspect of a weather~~
~~condition;~~

wherein the plurality of multi-dimensional arrays correspond to different layers above the earth, the layer of one multi-dimensional array being above the layer of another multi-dimensional array, such that the user can define different weather conditions for ~~eells in the~~ plurality of multi-dimensional array each cell defining a plurality of layers above the earth for a specific location within the virtual geographical area, of space, and

wherein the first, second and third attributes are used together to define the conditions for the first, second and third aspects of the weather, respectively, ~~condition~~ for each individual cell in the plurality of multi-dimensional arrays such that the user can define a different set of weather conditions for each individual cell in the plurality of multi-dimensional arrays.

2. (Currently Amended) The computer readable medium of claim 1, wherein the process ~~computer executable instructions~~ further comprises repeating steps d) - ~~i) f)~~ for a plurality of user-selected cells in the graphical depiction of the multi-dimensional arrays.

3. (Currently Amended) The computer readable medium of claim 1, wherein the process ~~computer executable instructions~~ further comprises:

~~j) g)~~ receiving a user input modifying at least one of the first, second, and third attributes;

~~k) h)~~ receiving user input selecting a second cell in the graphical depiction of the multi-

dimensional arrays;

l) i) applying the values of the first, second, and third attributes, as modified, to the second selected cell; and

m) j) shading the second selected cell a second color based on the values of the first, second, and third attributes, as modified.

4. (Currently Amended) The computer readable medium of claim 3, wherein the process ~~computer-executable instructions~~ further comprises repeating steps j) - m) h) - j) for a plurality of user-selected cells in the graphical depiction of the multi-dimensional arrays.

5. (Currently Amended) The computer readable medium of claim 1, wherein step i) f) comprises:

i)—determining a first color channel intensity based on the determined value of the first attribute;

ii)—determining a second color channel intensity based on the determined value of the second attribute;

iii)—determining a third color channel intensity based on the determined value of the third attribute; and

iv)—combining the color channel intensities to determine the shading color.

6. (Original) The computer readable medium of claim 5, wherein the first color channel is a red color channel, the second color channel is a green color channel, and the third color channel is a blue color channel.

7. (Currently Amended) ~~A~~ The computer readable medium of claim 5, the process further comprising: storing computer-executable instructions configured to allow a user to set attributes of individual cells in a multi-dimensional array, comprising:

a)—~~determining a value of a first attribute to be applied to the multi-dimensional array, the first attribute being associated with a first color channel;~~

~~b) — determining a value of a second attribute to be applied to the multi-dimensional array, the second attribute being associated with a second color channel;~~

~~e) — determining a value of a third attribute to be applied to the multi-dimensional array, the third attribute being associated with a third color channel;~~

~~d) — receiving user input selecting a cell in a graphical depiction of the multi-dimensional array each cell defining a specific area of space;~~

~~e) — applying the values of the first, second, and third attributes to the selected cell;~~
and

~~f) — shading the selected cell a color based on the values of the first, second, and third attributes;~~

~~wherein step f) comprises:~~

~~i) — determining a first color channel intensity based on the determined value of the first attribute;~~

~~ii) — determining a second color channel intensity based on the determined value of the second attribute;~~

~~iii) — determining a third color channel intensity based on the determined value of the third attribute; and~~

~~iv) — combining the color channel intensities to determine the shading color, and~~

~~wherein:~~

~~step i) comprises:~~

~~determining a first color channel intensity by:~~

~~A) determining a base-zero position of the determined value of the first attribute in a range of allowable values of the first attribute;₁;~~

~~B) determining a first multiplier by dividing a maximum allowable first color channel intensity by a base-zero position of the maximum allowable value of the first attribute;₁;~~
and

~~C) determining the first color channel intensity by multiplying the first multiplier by the base-zero position of the determined value of the first attribute;₁;~~

~~step ii) comprises:~~

determining a second color channel intensity by:

A) determining a base-zero position of the determined value of the second attribute in a range of allowable values of the second attribute;₂

B) determining a second multiplier by dividing a maximum allowable second color channel intensity by a base zero position of the maximum allowable value of the second attribute;₂ and

C) determining the second color channel intensity by multiplying the second multiplier by the base zero position of the determined value of the second attribute;₂ and

~~step iii) comprises:~~

determining a third color channel intensity by:

A) determining a base-zero position of the determined value of the third attribute in a range of allowable values of the third attribute;₃

B) determining a third multiplier by dividing a maximum allowable third color channel intensity by a base zero position of the maximum allowable value of the third attribute;₃ and

C) determining the third color channel intensity by multiplying the third multiplier by the base zero position of the determined value of the third attribute; and

~~wherein the first, second and third attributes are used to define an aspect of a weather condition for each individual cell in a plurality of multi-dimensional arrays in which one multi-dimensional array is above another multi dimensional array such that the user can define different weather conditions for each individual cell in the plurality of multi-dimensional arrays.~~

8-9. (Canceled)

10. (Previously Presented) The computer readable medium of claim 1, wherein the graphical depiction of each multi-dimensional array comprises a two-dimensional array displayed on a display device.

11. (Currently Amended) The computer readable medium of claim 1, wherein the process computer executable instructions further comprises exporting the multi-dimensional arrays in a data format usable by a computer game to simulate the weather conditions.

12-13. (Canceled).

14. (Currently Amended) The computer readable medium of claim 1, ~~3~~, wherein the predetermined location geographical area to which each cell of the two dimensional array correspond is of a same size.

15. (Original) The computer readable medium of claim 5, wherein the each color channel intensity gets darker as the determined value of the color channel's corresponding attribute gets more severe.

16. (Currently Amended) A computer readable medium storing computer executable instructions which, when executed by a computer, perform a process configured to allow a user to set attributes of individual cells in a plurality of multi-dimensional arrays representing a common virtual geographical area, each of the cells representing a predetermined location within the virtual geographical area, the process comprising:

a) ~~determining a value for each of a plurality of possible weather conditions attributes that can occur in the virtual geographical area; be applied to the multi-dimensional arrays;~~

b) receiving user input selecting a cell in a graphical depiction of any one of the multi-dimensional arrays, the selected cell representing a particular location within the virtual geographical area;

c) ~~b)~~ determining a state of a flag corresponding to each of the plurality of possible weather conditions by receiving a user input selecting whether or not each of the possible weather conditions should be applied to the particular location, attributes, wherein the flag indicates whether or not the corresponding attribute-weather condition should be applied to the

particular location; multi-dimensional arrays;

e) ~~receiving user input selecting a cell in a graphical depiction of any one of the multi-dimensional arrays;~~

d) applying to the selected cell ~~the values data indicative of each of the plurality of attributes possible weather conditions~~ whose flag indicates that the corresponding ~~attribute weather condition~~ should be applied to the particular location; multi-dimensional arrays; and

e) modifying the appearance of the selected cell in the graphical depiction to provide ing-visual feedback that of each of the possible weather conditions which have been the-flagged to be attribute(s) have been applied to the particular location, selected cell,

~~wherein the plurality of attributes define an aspect of a weather condition;~~

wherein the plurality of multi-dimensional arrays correspond to different layers above the earth, the layer of one multi-dimensional array being above the layer of another multi-dimensional array, such that the user can define different weather conditions for ~~cells in the multi-dimensional arrays each cell defining a plurality of layers above the earth for a specific location within the virtual geographical area, of space,~~ and

wherein the plurality of possible weather conditions ~~attributes~~ are used to define the ~~aspect of the weather conditions~~ for each individual cell in the plurality of multi-dimensional arrays such that the user can define different weather conditions for each individual cell in the plurality of multi-dimensional arrays.

17. (Original) The computer readable medium of claim 16, wherein step e) comprises shading the selected cell.

18. (Canceled)

19. (Currently Amended) The computer readable medium of claim 16, wherein the process computer-executable instructions further comprises exporting the multi-dimensional arrays in a data format usable by a computer game to simulate the weather conditions.

20. (Currently Amended) The computer readable medium of claim 17, wherein step e) comprises shading the selected cell a color based on ~~the values of whether or not each of three possible weather conditions are to be applied to the particular location. of the plurality of attributes.~~

21. (Currently Amended) The computer readable medium of claim 20, wherein step e) comprises:

i)——determining a first color channel intensity based on ~~the value of a first~~ of the three possible weather conditions; attribute;

ii)——determining a second color channel intensity based on ~~the value of a second~~ of the three possible weather conditions; attribute;

iii)——determining a third color channel intensity based on ~~the value of a third~~ of the three possible weather conditions; attribute; and

iv)——combining the color channel intensities to determine the shading color.

22. (Original) The computer readable medium of claim 21, wherein the first color channel is a red color channel, the second color channel is a green color channel, and the third color channel is a blue color channel.

23-24. (Canceled)

25. (Currently Amended) The computer readable medium of claim 22, wherein the ~~process computer-executable instructions~~ further comprises receiving user input identifying which of the three ~~attributes~~ possible weather conditions corresponds to each of the red, green, and blue color channels.

26. (Currently Amended) The computer readable medium of claim 16, wherein step e) comprises shading the selected cell darker as more ~~attributes~~ of the flags indicate that the ~~attributes~~ corresponding weather conditions should be applied to the particular location. ~~multi-~~

~~dimensional arrays.~~

27. (Currently Amended) A computer-readable medium storing computer executable instructions that, when executed, display a user interface on a computer display device, said user interface comprising:

a first interface component displaying a list of user-configurable aspects of weather, ~~attributes corresponding to a user-selected attribute layer, wherein and providing an interface through which~~ the user can specify an attribute value a particular weather condition corresponding to each ~~attribute~~ user-configurable aspect of weather in the list; and

a second interface component displaying a plurality of two-dimensional grids representative of a common virtual location-neutral geographical area, each of the displayed two-dimensional grids having a plurality of cells representing respective locations within the virtual geographical area, the second interface component providing a second interface through which the user can select any one of the cells of any one of the plurality of two-dimensional grids,

wherein, when the user selects a cell within any one of the plurality of two-dimensional grids via the second interface, the user-second interface component shades the selected cell based on the current ~~values-weather conditions~~ of a plurality of aspects of weather attributes in the list of ~~attributes-user-configurable aspects of weather, corresponding to the user-selected attribute layer,~~

~~wherein the plurality of attributes define an aspect of a weather condition,~~

wherein the plurality of two-dimensional grids correspond to different layers above the earth, the layer of one dimensional grid being above the layer of another dimensional grid such that the user can define different weather condition for cells in the plurality of two-dimensional grids each cell defining a plurality of layers above the earth for a specific location within the virtual geographical area, of space, and

wherein the plurality of ~~attributes-user-configurable aspects of weather~~ are used together to define ~~the aspect of the a set of~~ weather conditions for each individual cell in the plurality of two-dimensional grids such that the user can define a different set of weather conditions for each individual cell in the plurality of two-dimensional grids.

28-31. (Canceled).

32. (Currently Amended) The computer readable medium of claim 27, wherein the ~~user-interface-second interface component~~ shades the selected cell based on a first color channel having a first color channel intensity based on the weather condition specified for a first user-configurable aspect of weather, attribute, a second color channel having a second color channel intensity based on the weather condition specified for a second user-configurable aspect of weather, attribute, and a third color channel having a third color channel intensity based on the weather condition specified for a third user-configurable aspect of weather, attribute.

33. (Original) The computer readable medium of claim 32, wherein the first color channel is a red color channel, the second color channel is a blue color channel, and the third color channel is a green color channel.

34-40. (Canceled)

41. (Currently Amended) A computer system, comprising:

a memory configured to store data;

a display configured to display information;

a controller configured to load from the memory a plurality of multi-dimensional arrays representing a common virtual geographical area, each multi-dimensional array including a plurality of individual cells representing respective locations within the virtual geographical area, and to display on the display the loaded plurality of multi-dimensional arrays;

an input unit configured to receive;

_____ a user input defining a weather condition value of a first aspect of weather attribute to be applied to any one of the plurality of multi-dimensional arrays, the first aspect of weather attribute being associated with a first color channel,

_____ a user input defining a weather condition for value of a second aspect of weather

~~attribute~~ to be applied to said any one of the plurality of multi-dimensional arrays, the second aspect of weather ~~attribute~~ being associated with a second color channel,

a user input defining a weather condition for value of a third aspect of weather ~~attribute~~ to be applied to ~~the~~ said any of the multi-dimensional arrays, the third aspect of weather ~~attribute~~ being associated with a third color channel, and

a user input selecting a cell in said any one of the multi-dimensional arrays,
wherein the controller applies the weather conditions defined by the user for values of the
first, second, and third aspects of weather attributes to the selected cell, and shades the selected
cell a color based on the weather conditions defined by the user for values of the first, second,
and third aspects of weather, attributes,

wherein the plurality of multi-dimensional arrays correspond to different layers above the
earth, the layer of one multi-dimensional array being above the layer of another multi-
dimensional array, such that the user input can define different weather conditions for ~~cells in the~~
plurality of multi-dimensional arrays each cell defining a plurality of layers above the earth for a
specific location within the virtual geographical area, of space, and

wherein the first, second and third aspects of weather attributes are used to define ~~the~~
~~aspect of the~~ a set of weather conditions for each individual cell in the plurality of multi-
dimensional arrays such that the user can define a different set of weather conditions for each
individual cell in the plurality of multi-dimensional arrays.

42. (Previously Presented) The computer system of claim 41, wherein the user input unit
further includes a selection unit configured to select a model of an aircraft to be flown through
the plurality of multi-dimensional arrays.

43. (Previously Presented) The computer system of claim 42, wherein the plurality of
multi-dimensional arrays remain static such that the user can fly the aircraft through the plurality
of multi-dimensional arrays and experience different weather conditions defined in the individual
cells of the plurality of multi-dimensional arrays.

44. (Previously Presented) The computer system of claim 41, wherein the first, second and third weather attributes include any one of a cloud type, surface conditions, temperature, visibility characteristics and wind characteristics.